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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,274	01/04/2002	Jeffrey Allen Sturgill	UVD 0280 PA	6551
7590	03/16/2004			
Killworth, Gottman, Hagan & Schaeff, L.L.P. One Dayton Centre, Suite 500 Dayton, OH 45402-2023			EXAMINER OLTMANS, ANDREW L	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/038,274

Applicant(s)

STURGILL ET AL.

Examiner

Andrew L Oltmans

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-151 is/are pending in the application.
- 4a) Of the above claim(s) 49-122 and 148 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-33, 35, 37-48, 123-148 and 151 is/are rejected.
- 7) ☒ Claim(s) 13, 34 and 36 is/are objected to.
- 8) ☒ Claim(s) 1-151 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1-48, 123-148 and 151 in the letter of October 20, 2003 is acknowledged.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-11 and 14-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Claims 10-11 recited valence stabilizers that are inorganic. Claims 14-36 recite valence stabilizers that are organic. Claims 10, 11 and 14 recite, "carbonate" as both an inorganic and an organic valence stabilizer. It is unclear whether the "carbonate" is organic or inorganic.

- b. Claims dependent upon the above are likewise rejected under this statute.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Schapira et al. 6,068,709***

5. Claims 1-12, 14-15, 22, 32-33, 35, 37-42, 123-148 and 151 are rejected under 35

U.S.C. 102(b) as being anticipated by Schapira et al. 6,068,709 (Schapira).

Schapira teaches the claimed corrosion inhibiting conversion coating comprising a combined cobalt and cobalt valence stabilizer, as recited in claim 1, 123, 148 and 151, including stabilizers that are claimed as a member of the claimed lists of claims 9-11, 14-15, 22 and 133 (e.g. carbonate, mono-, di- tri- amines, polyamines, etc...), including the solubility adjuster substituent claimed in the lists of claims 32-35 (e.g. hydroxyl, amine, carboxyl, etc...), including the solubility control agent claimed in the lists of claims 37-42 and 134-139 (e.g. the fluorine compounds, phosphate, H, Zn, Ni Fe, Al, the nitrogen containing organics, the NR<sub>4</sub> compound, etc...), including the bath additive recited in claims 123-126 (e.g. dissolved oxygen, dissolved fluorine, nitrites chlorates, nitrates, etc...), including at least one of the cobalt sources recited in claim 128 , and including the preparative agents recited in claims 129-132 (e.g. fluorine compounds), (abstract; and col 2):

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of the formulae:



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in which

n and p are integers from 1 to 6 with the proviso that, in case of formula (II),  $n+p \leq 6$ ,

45 c represents the charge of the complex and can consequently be positive or negative according to the charge of the Ligand and of Z,

the Ligand is selected among the ions of the group comprising  $\text{NO}_2$ ,  $\text{CN}$ ,  $\text{CO}_3$  and  $\text{SO}_3$ , among the ions of the group comprising oxalate ions, acetate ions, citrate ions, gluconate ions, tartrate ions and acetylacetonate ions, and among the compounds of formula  $\text{N}(\text{R}_1, \text{R}_2, \text{R}_3)$  wherein  $\text{R}_1$ ,  $\text{R}_2$  and  $\text{R}_3$  are selected, independently from one another, in the groups comprising H, the carbonated groups in  $\text{C}_1$  to  $\text{C}_6$  among which especially alkyl, hydroxyalkyl, hydroxy, alkylamine, hydroxy-alkylamine groups as well as carboxylic or aminocarboxylic acids and their salts, and

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Z is selected in the group comprising Cl, Br, F, I, OH,  $\text{NO}_3$ ,  $\text{SCN}$ ,  $\text{PO}_4$ ,  $\text{SO}_4$ ,  $\text{S}_2\text{O}_3$ ,  $\text{MoO}_4$ ,  $\text{SeO}_4$  and  $\text{H}_2\text{O}$ , it being understood that the given complex can comprise one or several Ligands and one or several Zs, different from each other.

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[illegible]

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The pH recited in claims 144-145 is taught in (col 2):

30                    Consequently, the phosphatization bath according to the invention whose pH is from about 1 to about 5.5, which comprises the classical components of phosphatization

Schapira teaches that the composition may include any classical accelerator (e.g. oxidizer) in the composition (col 3):

                  The phosphatization bath according to the invention may contain a classical accelerator in addition to the accelerator 40 consisting of the trivalent cobalt complex.

Schapira teaches that the composition creates a surface (i.e. a morphology) that increases paint adhesion, as recited in claim 8 (col 7, lines 19-23; Table C). The claims do not distinguish over the teachings of Schapira.

With respect to the temperatures recited in claims 146-147, it is noted that claims 146-147 recite a temperature, but the temperature does not lend patentability to the claimed *composition*, since the composition is taught by Schapira and the temperature is merely an arbitrary property that does not effect the composition as claimed.

With respect to the property of being "sparingly soluble" at room temperature conditions (e.g. claims 148 and 151), the term does not distinguish over the solubility of Schapira wherein the solubility of Schapira is sufficient to form a conversion coating solution that is capable of forming a conversion coating on the substrate. The term "sparingly" is a relative term and does distinguish over any value of solubility.

With respect to the properties recited in claims 2-7, 12 and 140-143, including the solubility, the electrostatic barrier, the ion exchange property, the thickness of the coating (i.e. the coating resulting from the contact with the substrate), and the cavity containing cobalt and an

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additional ion are inherent properties necessarily present from the presence of the same claimed chemicals, namely the trivalent cobalt complex that has been combined with a ligand (i.e. a valence stabilizer).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Applicant's Admitted Known Prior Art In Specification***

7. Claims 1-12, 14-15, 123-126, 129-148, and 151 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Known Prior Art In Specification (Applicant's Admission).

Applicant's Admission includes teachings of cobalt complexes having the claimed valences and valence stabilizers (e.g. inorganic or organic stabilizers)(page 5, line 23 to page 7, line 6). Applicant's specification cites various references on pages 5 and 6 that teach the conversion coatings claimed:



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The following references describe conversion coating processes based on cobalt: PCT International Application Nos. WO 96/29,448, WO 98/51,841, WO 96/21,753, WO 93/05,198, and S. African Patent No. ZA 93/01,234 to Dolan; PCT International Application Nos. WO 96/05,335, WO 94/00,619, and European Patent Application Nos. EP 523,288, EP 458,020, EP 488,430, and U.S. Patent Nos. 5,873,953, 5,411,606, 5,378,293, 5,298,092, and 5,551,994 to Schriever. These specifications use additives that they term "bath stabilizers." These chemical species are claimed

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and

A post-treatment rinse with a vanadate or tungstate solution is used in PCT International Application Nos. WO 96/29,448 and WO 98/51,841 to Dolan, as well as PCT International Application No. WO 96/05,335 and U.S. Patent No. 5,551,994 to Schriever. This rinse seals the coating deposited from the solution, as described in these specifications.  $\text{Co}^{+3}$ -vanadate/tungstate complexes form during these sealing treatments. These complexes are slightly soluble and serve to enhance the corrosion resistance of the deposited coating. However, the sealing step used in this art is not an efficient method to treat the coating thickness or to incorporate sparingly soluble  $\text{Co}^{+3}$  compounds into the coating effectively. The effectiveness of the vanadate/tungstate sealing step is also reduced because the bath stabilizers carried over from the first solution increase the solubility of  $\text{Co}^{+3}$ -vanadate/tungstate complexes. Furthermore, the toxicity of the conversion

Applicant's Admission includes the limitation of claims 1-12, 14-15, 123-126, 129-148, and 151. Applicant's admissions of known prior art render the instant claims obvious, see MPEP 2129.

With respect to the temperatures recited in claims 146-147, it is noted that claims 146-147 recite a temperature, but the temperature does not lend patentability to the claimed *composition*, since the composition is admitted by applicant and the temperature is merely an arbitrary property that does not effect the composition as claimed.

With respect to the property of being "sparingly soluble" at room temperature conditions (e.g. claims 148 and 151), the term does not distinguish over the solubility admitted by applicant wherein the solubility of the composition admitted by applicant is sufficient to form a conversion coating solution that is capable of forming a conversion coating on the substrate. The term "sparingly" is a relative term and does distinguish over any value of solubility.

With respect to the properties recited in claims 2-7, 12 and 140-143, including the solubility, the electrostatic barrier, the ion exchange property, the thickness of the coating (i.e. the coating resulting from the contact with the substrate), and the cavity containing cobalt and an additional ion are inherent properties necessarily present from the presence of the same claimed chemicals, namely the trivalent cobalt complex that has been combined with a ligand (i.e. a valence stabilizer).

***Schapira et al. 6,068,709 in view of Ouyang et al. 5,505,792***

8. Claims 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schapira et al. 6,068,709 (Schapira) in view of Ouyang et al. 5,505,792 (Ouyang).

Schapira teaches and is applied as above in paragraph 5.

Schapira fails to meet all the limitations of the instant claims in that Schapira does not explicitly teach the claimed coloring or the coloring additives.

Ouyang teaches coloring and coloring additive (e.g. the UV blocker and color-fast additive) for conversion coatings.

One of ordinary skill in the art at the time that the invention was made would have found the invention to be obvious because one of ordinary skill in the art would have been motivated to

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provide the coloring chemicals of Ouyang into the conversion coating of Schapira in order to provide Schapira with the desirable property of a color for the conversion coating.

*Allowable Subject Matter*

9. Claims 13, 34 and 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 16-21, 23-31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

a. A primary reason for the allowance of claim 13, under the above conditions, is that the prior art fails to teach or suggest, either alone or in combination, the instantly claimed conversion coating, wherein the cobalt/valence stabilizer complex has a central cavity, wherein the central cavity contains cobalt and the particular ions instantly claimed.

b. A primary reason for the allowance of claims 16-21 and 23-31, under the above conditions, is that the prior art fails to teach or suggest, either alone or in combination, the instantly claimed conversion coating, wherein the valence stabilizer in the cobalt/valence stabilizer complex is one of the instantly claimed chemicals.

c. A primary reason for the allowance of claims 34, under the above conditions, is that the prior art fails to teach or suggest, either alone or in combination, the instantly

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claimed conversion coating, wherein the cobalt/valence stabilizer complex has the claimed substituent group on the organic valence stabilizer.

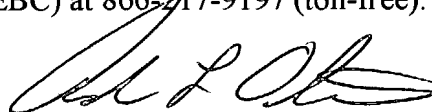
d. A primary reason for the allowance of claims 36, under the above conditions, is that the prior art fails to teach or suggest, either alone or in combination, the instantly claimed conversion coating, wherein the cobalt/valence stabilizer complex has an electrostatic barrier layer and the valence stabilizer portion of the cobalt/valence stabilizer complex has the claimed substituent group on the organic valence stabilizer.

### *Conclusion*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L Oltmans whose telephone number is 571-272-1248. The examiner can normally be reached from 7:00 to 3:30, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Andrew L. Oltmans  
Patent Examiner  
Art Unit 1742

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